

I claim:

1. An electrical connector for providing an electrical connection to an unstripped end of an insulated electrical cable having an outer sheath within which an insulated hot wire, an insulated neutral wire, and a ground wire are enclosed comprising:

a) a body formed of an electrically insulating material, said body having a first body end and a second body end, said body having a cavity in said first body end sized to receive said unstripped end of insulated electrical cable;

b) a lid having a first lid end and a second lid end, said second lid end pivotally connected to said second body end, said lid adapted to rotate around an axis of rotation between an open position and a closed position; and

c) plural blade conductors attached to said lid comprising a hot blade conductor, a neutral blade conductor, and at least one ground blade conductor, said blade conductors each having blade end comprising at least one downwardly depending blade and an outlet portion, said blades conductors being spaced apart and attached to the lid whereby when said lid is in open position said blades do not extend within said cavity and when said lid in a closed position said blades do extend within said cavity.

2. An electrical connector according to claim 1, wherein said cavity in said body has a generally oval cross sectional configuration.

3. An electrical connector according to claim 2, wherein

said cavity in said body has a central ridge a bottom portion of said cavity.

4. An electrical connector according to claim 1, wherein said cavity in said body has a generally rectangular cross
5 sectional configuration with rounded corners.

5. An electrical connector according to claim 4, wherein said cavity in said body has a central ridge a bottom portion of said cavity.

6. An electrical connector according to claim 1 wherein
10 said cavity in said body has a generally figure "8" shaped cross sectional configuration with a central ridge provided on a bottom portion of said cavity and a second central ridge on a top portion of said cavity.

7. An electrical connector according to claim 1 wherein
15 said cavity in said body has a generally "B" shaped cross sectional configuration with rounded corners with a central ridge provided on a bottom portion of said cavity and a generally flat surface on a top portion of said cavity.

8. An electrical connector according to claim 7 wherein
20 said cavity is adapted to receive an insulated electrical cable from one of a finite set of insulated electrical cable manufactures which each produce cables of differing widths wherein the width of said cavity is equal to the width of the most narrow cable manufactured by said finite set of
25 manufacturers whereby sides of the cavity provide at least some frictional resistance such that the cable fits snugly within said

cavity.

9. An electrical connector according to claim 8 wherein said cavity is adapted to receive an insulated electrical cable from one of a finite set of insulated electrical cable
5 manufactures which each produce cables having a different volume of paper insulation whereby rounded portions of the cavity located on opposite side of said central ridge provide a sufficient volume of space to allow said unstripped end of insulated electrical cable from the manufacturer with the
10 greatest volume of paper insulation to deform such that the cable fits snugly within said cavity.

10. An electrical connector according to claim 1 wherein said body has a top body surface, said top body surface having a hot blade opening, a neutral blade and at least one ground blade
15 opening therein.

11. An electrical connector according to claim 10 wherein said hot blade opening, said a neutral blade opening and said at least one ground blade opening each extend from said top body surface into said cavity.

20 12. An electrical connector according to claim 10 wherein said hot blade opening, said neutral blade opening and said at least one ground blade opening are positioned to receive, respectively, the blade ends of said hot blade conductor, said neutral blade conductor and said at least one ground blade
25 conductor.

13. An electrical connector according to claim 1 wherein

said body has opposite surfaces, said opposite side surfaces each having a textured gripping surface.

14. An electrical connector according to claim 13 wherein said textured gripping surfaces aid the use in gripping the connector during an insertion of an insulated electrical cable into the connector.

15. An electrical connector according to claim 13 wherein said textured gripping surfaces aid the user in gripping the connector while moving the lid from said open to said closed position.

16. An electrical connector according to claim 1 wherein said second body end has a central recess and a pair of ears on opposite sides of said central recess.

17. An electrical connector according to claim 16 wherein each of said ears has a hinge opening along said an axis of rotation.

18. An electrical connector according to claim 1 wherein said body has at least one primary latch opening.

19. An electrical connector according to claim 1 wherein said body has at least one secondary latch opening.

20. An electrical connector according to claim 1 wherein said body has a pair of lock release tabs on opposite sides of said body to allow the electrical connector to be removably secured to compatible electrical devices.

21. An electrical connector according to claim 1 wherein said body is fabricated from a lower body portion and an upper

body portion which are permanently affixed together to form said body.

22. An electrical connector according to claim 1 wherein said lid is asymmetrical in cross sectional configuration.

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~~22~~. An electrical connector according to claim 22 wherein said lid has a least one opposite side wall surface portion which is formed at an angle not equal to 90 degrees relative to a top surface of said lid.

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~~23~~. An electrical connector according to claim 1 wherein said lid includes at least one primary latch finger.

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~~24~~. An electrical connector according to claim 23 wherein said at least one primary latch finger is adapted to be received by at least one primary latch opening in said body when said lid is moved from an open to a closed position.

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~~25~~. An electrical connector according to claim 24 wherein said at least one primary latch finger secures said lid in closed position.

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~~26~~. An electrical connector according to claim 25 wherein said at least one primary latch finger is adapted to enter but not exit said at least one primary latch opening whereby once said lid is closed it is permanently secured in a closed position and can not be reopened.

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~~27~~. An electrical connector according to claim 25 wherein said at least one primary latch finger has a lower inclined surface thereon which, as the lid is moved from an open to a closed position, urges said at least one primary latch finger

inwardly toward a centerline of said at least one primary latch opening until said lower inclined surface reaches a primary recess in said at least one primary latch opening and wherein said at least one primary latch finger has a latching ledge surface thereon, said latching ledge surface adapted to engage a locking surface within said at least one primary latch opening once said lower inclined surface reaches said primary recess.

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~~27~~. An electrical connector according to claim 28 wherein said lower inclined surface and said latching ledge surface are in the form of a generally triangular tooth portion on a lower end of said at least one primary latch finger.

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~~28~~. An electrical connector according to claim 1 wherein said lid includes at least one secondary latch finger.

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~~29~~. An electrical connector according to claim 28 wherein said at least one secondary latch finger is adapted to be received by at least one secondary latch opening in said body when said lid is moved from an open to a partially closed position.

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~~30~~. An electrical connector according to claim 29 wherein said at least one secondary latch finger secures said lid in a partially closed position.

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~~31~~. An electrical connector according to claim 30 wherein said at least one secondary latch finger is adapted to enter but and exit said at least one secondary latch opening whereby once said lid is partially closed it is held in such partially closed position by friction but can be reopened to an open position by

applying sufficient upward force to said lid.

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~~32~~. An electrical connector according to claim 31 wherein
said at least one secondary latch finger has a lower inclined
surface thereon which, as the lid is moved from an open to a
5 partially closed position, urges said at least one secondary
latch finger inwardly toward a centerline of said at least one
secondary latch opening until said lower inclined surface reaches
a secondary recess in said at least one secondary latch opening
and wherein said at least one secondary latch finger also has an
10 upper inclined surface thereon which, as the lid is moved from an
partially closed to an open position, urges said at least one
secondary latch finger inwardly toward a centerline of said at
least one secondary latch opening allowing the lid to be moved to
an open position.

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~~33~~. An electrical connector according to claim 32 wherein
said lower inclined surface and said upper inclined surface are
in the form of a generally semi-circular protrusion on a lower
end of said at least one secondary latch finger.

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~~34~~. An electrical connector for insulated cable according
20 to claim 1 wherein said lid further comprises a pair of spaced
apart insulating plates which are positioned on opposite sides of
an end of said ground conductor when said lid is in a closed
position.

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~~35~~. An electrical connector for insulated cable according
25 to claim 34 whereby the possibility of arcing of electrical
current between an end of said ground conductor and an end of one

of said insulated hot wire and said insulated neutral wire is reduced by said insulating plates.

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~~36~~. An electrical connector for insulated cable according to claim 1 wherein said second lid end is provided with at least three outlet openings to provide access from outside of said connector to said hot blade conductor, said neutral blade conductor, and said at least one ground blade conductor.

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~~37~~. An electrical connector for insulated cable according to claim 1 wherein said lid has at hot blade conductor channel, a neutral blade conductor channel, and said at least one ground blade conductor channel on an inner surface thereof adapted to receive and position, respectively, hot blade conductor, said neutral blade conductor, and said at least one ground blade conductor.

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~~38~~. An electrical connector for insulated cable according to claim 1 wherein said first end of said lid has downwardly extending grip strain relief member adapted to grip against and securely hold said insulated electrical cable within said electrical connector when said lid is moved to a closed position.

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~~39~~. An electrical connector for insulated cable according to claim 1 wherein said lid has a generally planar configuration on said first end and has a generally cylindrical lid portion provided on said second end, said cylindrical lid portion adapted to be attached for pivotal movement within a central recess in said body portion between a pair of ears provided on opposite sides of said central recess on said body.

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40. An electrical connector for insulated cable according to claim 1 wherein said lid is formed from an upper lid member and a lower lid member between which said plural blade conductors are positioned and attached.

5 ~~BLADE CLAIMS~~

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41. An electrical connector for insulated cable according to claim 1 wherein said blade portions of said hot blade conductor, said neutral blade conductor, and said at least one ground blade conductor make electrical contact, respectively, with a hot conductor wire, a neutral conductor wire, and a ground conductor wire when said lid is moved from an open to a closed position with an unstripped end of an insulated electrical cable present in said cavity.

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42. An electrical connector for insulated cable according to claim 41 wherein said at least one ground blade conductor includes a pair of spaced apart blade members wherein in a closed position a ground blade member is in electrical contact on opposite sides of a single ground conductor wire.

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43. An electrical connector for insulated cable according to claim 42 wherein said pair of said ground blade members aid in securing and holding said ground conductor wire in a desired position within the electrical connector when said lid is in a closed position.

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44. An electrical connector for insulated cable according to claim 42 wherein said pair of ground blade members are spaced apart a distance no greater than the diameter of said ground

conductor wire.

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~~45.~~

An electrical connector for insulated cable according to claim 42 wherein said pair of ground blade members are spaced apart a distance slightly less than the diameter of said conductors and wherein said spaced apart blades exert inward force on opposite sides of said conductors.

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An electrical connector for insulated cable according to claim 42 wherein when said lid is moved from an open position to a closed position, with an unstripped end of insulated electrical cable present in the cavity, said ground blade members slice through the outer sheath of and move to a location where said ground blade members are in electrically contact with ground conductor wire.

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An electrical connector for insulated cable according to claim 1 wherein when said lid is moved from an open position to a closed position, with an unstripped end of insulated electrical cable present in the cavity, said blade portions of said hot blade conductor and said neutral blade conductor, respectively, puncture through said outer sheath and puncture through the insulation of said hot conductor wire and said neutral conductor wire.

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An electrical connector for insulated cable according to claim 47 wherein said hot wire conductor blade makes electrical contact with said hot conductor wire on a side of said hot wire most distant from said ground wire and said neutral wire conductor blade makes electrical contact with said neutral

conductor wire on a side of said neutral wire most distant from said ground wire.

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~~49~~. An electrical connector for insulated cable according to claim 1 wherein said at least one ground wire conductor blade is generally "L" shaped.

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~~50~~. An electrical connector for insulated cable according to claim 49 wherein said at least one ground wire conductor blade is provided along a front edge and along a bottom edge of a generally rectangular insulating plate member.

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~~51~~. An electrical connector for insulated cable according to claim 1 wherein said at least one ground wire conductor blade has a bottom edge blade portion.

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~~52~~. An electrical connector for insulated cable according to claim 1 wherein said bottom edge blade portion slices the outer sheathing as the lid is moved from an open position to a closed position when an insulated cable is present in the cavity.

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~~53~~. An electrical connector for insulated cable according to claim 1 wherein said at least one ground wire conductor blade has a front edge blade portion.

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~~54~~. An electrical connector for insulated cable according to claim 53 wherein said front edge blade portion has a central blade segment, said central blade segment deformed inwardly with respect to said front edge blade portion, said central blade segment has a leading edge, whereby when the lid is moved from an open position to a closed position with an insulated cable present in the cavity, said leading edge of said central blade

segment cuts into a side portion of the ground conductor wire.

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~~55~~. An electrical connector for insulated cable according
54 wherein said central blade segment is deformed inwardly with
respect to said front edge blade portion at an angle of
5 approximately 17 degrees.

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~~56~~. An electrical connector according to claim 1 wherein
said a hot blade conductor and said a neutral blade conductor
have blades having a forward edge which is curved along arc
having a radius point located at an axis of rotation of said lid.

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~~57~~. An electrical connector according to claim 1 wherein
said a hot blade conductor and said a neutral blade conductor
have blades having a sharp point on a lowermost end thereof.

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~~58~~. An electrical connector for insulated cable according
to claim 57 wherein each of said outlet portion of said conductor
15 blade members is in the form of one of a male plug member and a
female receptacle member.

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~~59~~. An electrical connector for insulated cable according
to claim 1 further comprising a coupling device adapted to
receive the second end of a pair of electrical connectors whereby
20 a splice connecting two unstripped ends of insulated electrical
cable having an outer sheath within which an insulated hot wire,
an insulated neutral wire, and a ground wire are enclosed can be
efficiently provided.

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~~60~~. An electrical connector according to claim 59 wherein
25 said coupling device includes two open ends to receive an outlet
portion of said electrical connectors and wherein said coupling

device has three conducting blades to provide an electrical connection for one open end to an opposite open end thereof.